

US EPA ARCHIVE DOCUMENT

8-13-91



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

3

OFFICE OF  
PESTICIDES AND TOXIC  
SUBSTANCES

MEMORANDUM

SUBJECT: Evaluation of the trifluralin metabolism data

TO: Caswell File No. 889 (Trifluralin)

FROM: Whang Phang, Ph.D. *Whyte 8/13/91*  
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THROUGH: James Rowe, Ph.D. *James Rowe 8/13/91*  
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and  
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Introduction

For re-registering trifluralin, Tox. Branch II has been requested to assess whether or not the existing metabolism studies on trifluralin are sufficient to meet the data requirements for a general metabolism study.

Discussion

The toxicology and metabolism data on trifluralin were evaluated by the Peer Review Committee on Carcinogenicity in 1986, and the Committee classified this chemical as a Category C (possible human) carcinogen based upon the increases in the incidence of combined malignant and benign urinary bladder neoplasm and of follicular cell adenomas and carcinomas of the thyroid in high-dose female and male rats, respectively. In the Peer Review Document, B. Jaeger presented the available metabolism data on trifluralin in addition to the metabolism data on two structurally related compounds, profluralin and ethalfluralin. All three compounds showed similar patterns of excretion.

Trifluralin is not readily absorbed from the gastrointestinal tract; however, the absorbed fraction is completely metabolized. Within 3 days of oral administration, virtually all of the administered radioactivity was excreted, and majority of the radioactivity was excreted during the first 24 hours of dosing. Approximately 80% of the administered dose was eliminated in the feces, and the



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104

remaining was excreted in the urine (Peer Review Document on Carcinogenicity of Trifluralin, Tox. Branch/HED/OPP, 1986 and Health Advisory on Trifluralin, Office of Drinking Water, 1988).

In 1987, the Agency issued a Registration Standard on trifluralin, and it states that the existing metabolism data were not sufficient to characterize the general metabolism of this chemical. Additional data on isolation and characterization of the urinary metabolites were required. In response, the registrant, Elanco Products Co., submitted a metabolism study in rats in 1989. The data show (1) intact trifluralin was not detected in the urine of male or female rats; (2) as many as 30 to 40 metabolites were present in the urinary samples, and individually most of these metabolites represented less than 1 to 2% of the total radioactivity in urine.

In determining whether or not additional metabolism data on trifluralin are needed, this reviewer has considered the guidelines on data requirement for this chemical and the scientific value of additional data. In this case, more data will not substantially improve the understanding of the metabolism of this chemical, and the existing metabolism data are adequate.